

Original scientific paper
Оригиналан научни рад
UDC: 634.711:]615.453.8:579.86
DOI: 10.7251/AGREN1701001S

University of Banjaluka, Faculty of Agriculture



Consumer Assessment of Raspberry Teas

Monika Szczygiol¹

¹*Wroclaw University of Environmental and Life Sciences, Wroclaw, Poland*

Abstract

The raspberry teas are the most common among the national fruit teas. The aim of the study was a consumer assessment of three different raspberry teas with different composition and content of raspberries. The survey was conducted in December 2016 among 70 randomly selected students of the Wrocław University of Environmental and Life Sciences. In this study we can observe that a higher content of raspberries in tea were rated better in taste than the tea containing less raspberries. The addition of hibiscus and chokeberry affect a better assessment of the color and flavor of tea. The study had to make the consumers aware of the fact that the name declared on the packaging "Raspberry Tea" does not necessarily reflect its actual composition.

Key words: raspberry tea, consumer assessment, falsification

Introduction

For many years the study of consumer preferences has been the subject of interest among people of science and business representatives. Access to product information and the increasing consumer awareness cause such a behavior and show that consumer preferences should be monitored constantly. A contemporary consumer choosing a product is guided by its high quality as well as its pro-health properties (Barylko-Piekielna & Matuszewska, 2009). An intense competition is observed among the products which have a beneficial effect on health. Tea belongs to the sector of the food industry with good development prospects and growing sales, as a result of increasing consumer awareness about proper nutrition and its impact on health.

Teas possess antioxidant, anti-carcinogenic and weight-loss properties (Dmowski & Sieńkowska, 2015). Poland is a country with a high intake of tea. It is estimated that the Poles drink 1 kg tea per year, with the result of Poland occupying the fourth place in the European ranking of countries with the highest consumption of tea, whereas the ninth place in the world ranking is occupied by Japan and Saudi Arabia. According to market analysts, the Poles are increasingly choosing tea with functional properties, showing a positive effect on the body. These teas are now more available in developing herbal stores. Poles usually choose black tea, its share in retail sales is estimated at 58.9%, followed by herbal tea (14.2%), Earl Grey (10.2%), green tea (8.1%), fruit tea (7.1%), red tea (1.3%) and other (0.4%) (Mokrysz, 2014). At the beginning of the twentieth century, market research showed that consumers preferred fruit tea 10 times more than green tea. Currently, these preferences are changing in favor of green tea (Boruc, 2000). Tea is defined as herbal tea brewed from the leaves and buds of the plant, called the same name, which belong to different cultivars of evergreen tea plant (*Camellia sinensis*).

According to this definition, infusions of various herbs and dried fruit should not be called tea, but they are only determined in the usual meaning (Szweykowska & Szweykowski, 2003). However, this fruit tea is increasingly attractive to consumers. The assortment of national fruit tea is very powerful and has more than 200 products from several manufacturers of tea. The raspberry teas are the most common among fruit teas. Based on a study conducted by the Institute of Natural Fibres and Medicinal Plants in Poznań, it can be stated that the most common additives among tea fruits were hibiscus flower, apple fruit and rosehip. These additions constituted 84, 67 and 61% of tea. This study also implies that additives for improving flavor and aroma and acidity regulators, mainly citric acid appeared in 83% fruit teas. Institute estimated in his study that 41% of raspberry tea does not exceed 10% of raspberries, and in extreme cases, their content reaches only 0.1-0.6%. These treatments are a common practice in the food industry. They result from economic issues and the desire to reduce costs to achieve better profits (Adamczak et al., 2015). The Act dated 24 October 2008 on the commercial quality of agri-food products determines when a product can be classified as falsified. "Product, in which changes were made, including changes in labeling, designed to hide its actual composition or other properties when those findings or changes significantly affect the interests of consumers, in particular with treatments that have changed or concealed its actual composition (www.isap.sejm.gov.pl).” Assessment of the authenticity of food and the detection falsification is still a problem nowadays.

Tea is among the products in which falsification is commonly observed, by limiting the content of the desired raw material and replacing it with another, less expensive, as well as the addition of dyes or flavorings (Dmowski & Sieńkowska, 2008).

Material and Methods

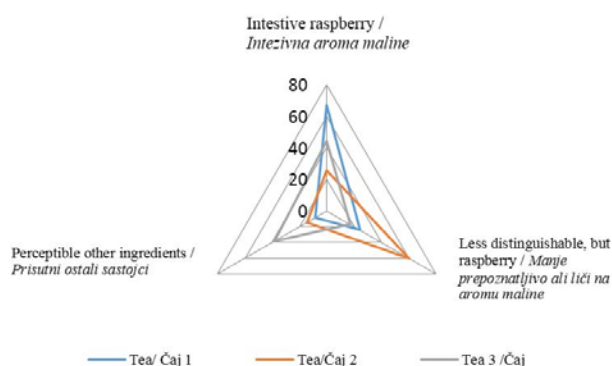
The aim of the study was a consumer assessment of the three different raspberry teas with different composition and content of raspberries. The organoleptic assessment had to answer the question whether the contents of raspberries and additions contained in the teas have an impact on the authenticity assessment of teas and preference of the respondents. In the study, three different manufacturers of raspberry tea were used with the following composition: Tea 1: dried hibiscus flower (50%), dried fruits: chokeberry (33.5%), raspberries (11%), and acidity regulator: citric acid, flavors; Tea 2: raspberry fruit (100%); Tea 3: wild rose (55%), hibiscus, flavor, raspberry (0.6%) and maltodextrin. Tea 2 was purchased in the herbal store while the other two were bought in the supermarket in Wrocław. The assessment of the teas concerned the powdery form and the infusion. The study used the survey method of a questionnaire for assessing individual parameters in teas. The survey respondents assessed the powdery form of 3 different teas according to the grading scale: aroma (intensive raspberry; less distinguishable, but raspberry; perceptible other ingredients); color (unsuitable; sufficient; very desirable) and texture (unsuitable, sufficient, very desirable).

However, the previously prepared infusion was assessed with regard to aroma, color and taste according to the grading scale (rejecting, less encouraging, sufficient, desirable, very desirable). Infusion teas were given to respondents in encoded cups numbering them 1 to 3. Respondents defined the taste of raspberries: none, low, medium, fine and very strong. Moreover, they answered the question whether any flavor different than the raspberry taste was noticeable. In the case of affirmative answer, they defined the specific taste. The survey was conducted in December 2016 among 70 randomly selected students of the Wrocław University of Environmental and Life Sciences. It was conducted with both male and female consumers, who drink tea (Shams, 2014).

Results and Discussion

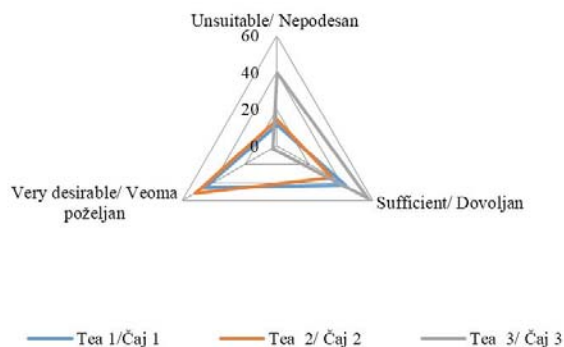
Results indicate that powdery tea forms differ in terms of intensity of raspberry aroma (Graph 1). The smell of raspberries was most noticeable in the case of Tea 1, and the least in Tea 2, where the majority of respondents recognized this smell less distinguishable than raspberry (60% of answers).

In the case of Tea 3, the respondents most frequently reported that noticeable were the other components. These results are reflected while looking at the composition of teas. Tea 1 contains 11% of raspberry, compared to the Tea 3 which contains 0.6% of raspberry. Tea 1 and 3 were evaluated more preferably in terms of intensity of raspberry aroma, than in the case of Tea 2, where the content of raspberry was 100%. These results can be explained by the fact that in the composition of the Teas 1 and 3 there are flavorings and other raw materials, which can mistakenly emphasize the smell of raspberry.



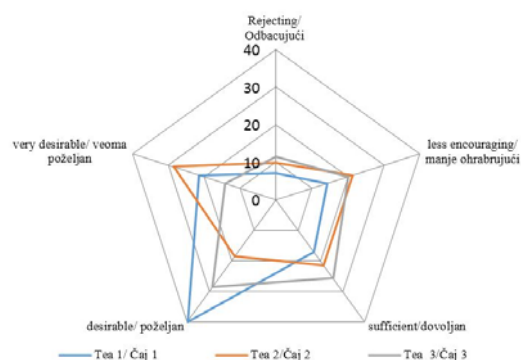
Graph 1. Powdery form of teas, assessment of smell
Прашката форма чајева, процјена мириса

In the opinion of respondents, the color of Tea 2 was most frequently considered as very desirable (51% of responses), whereas the color of Tea 3 was considered sufficient (57% of responses) and unsuitable (40% of responses). These results are presented in the Graph 2.



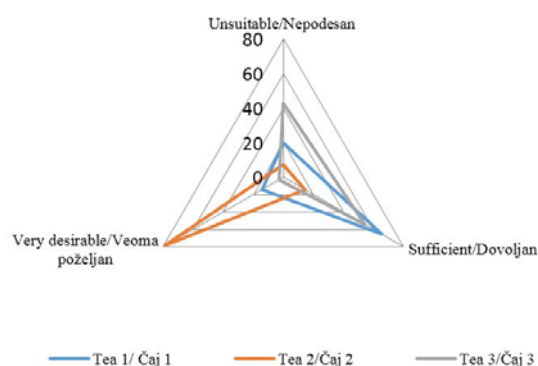
Graph 2. Powdery form of teas, assessment of color
Прашката форма чајева, процјена боје

Similar results were obtained for the assessment of the consistency of teas (Graph 3). The consistency of Tea 2 was considered very desirable (79% of responses), while the consistency of Tea 3 rated as unsuitable (43% of responses). Tea 2 was more preferably assessed in terms of color and consistency. This is due to the fact that this tea does not have any additional raw materials and its color and consistency are homogeneous and expressive. Tea 3 obtained the lowest rating in terms of color and consistency. It includes in its composition 0.6% of raspberry and its color and consistency do not resemble the features specific to the raspberries.



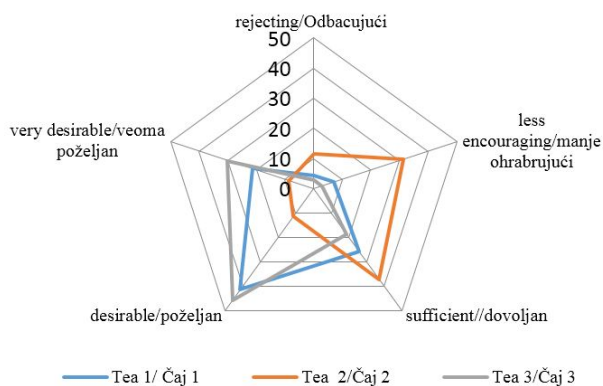
Graph 3. Powdery form of teas, assessment of consistency
Прашката форма чајева, процјена текстуре

In the second part of the survey, the respondents were asked to evaluate a previously prepared infusion. The taste of Tea 1 was most frequently considered as desirable (40% of responses). Opinions in the case of Tea 2 are diversified. For example 29% of the respondents recognized the taste of Tea 2 as very desirable (29%); in comparison, nearly 22% of the respondents recognized it as less encouraging (Graph 4).



Graph 4. Teas infusion, assessment of taste
Чајеви у форми инфузије, процјена укуса

Tea 3 occurred to be the most attractive in terms of color. Nearly 46% of the respondents considered its color as desirable, and 30% rated it as very desirable. The color of Tea 2 infusion, in comparison to the other teas, has been adversely evaluated (Graph 5). The respondents most often assessed its color as sufficient (37% of responses) or less encouraging (32% of responses). Tea 2 is not attractive to the respondents because its color is not expressive, and its composition contains only raspberries. Tea 3 is more attractive in terms of color. Its color is strengthened by 55% of wild rose and hibiscus.



Graph 5. Teas infusion, assessment of color
Čajevi u formi infuzije, procjena boje

Assessing the smell of tea, Tea 1 and Tea 3 were rated the highest. The smell of Tea 2 seemed to be unattractive, and was rated as less encouraging (37% of responses) and sufficient (36% of responses). According to the opinion of the respondents, the intensity of raspberry flavor was at the sufficient level.

At the end of the study, respondents were asked to answer whether any flavor different than the raspberry taste is noticeable. Respondents recognized (71% of responses) that Tea 3 had got a flavor different than the raspberry, indicating chemical flavor, lemon flavor and hibiscus. Whereas 59% of respondents considered that in Tea 2 there were other flavors perceptible rather than raspberry, for example the taste of herbal, earthy taste, anise, linden or strawberry. The most common answer (53% of responses) was that Tea 1 showed no foreign tastes. Answers to this question may wonder, especially with regard to Tea 2 (raspberries content 100%). According to the consumers, taste may be identified as delicate. The foreign flavor of Tea 3 stems from presence of hibiscus, rose hips (taste acidity) and maltodextrin.

Conclusion

Raspberry tea is the most popular tea in winter. Because of their taste and health benefits, raspberries are often a limited component in teas. The quality of tea is most often identified with its taste, color and smell (Nowak, 2009). Due to the fact that the presented research was in its preliminary form, the sample may not be representative for the consumers and it requires further research. In this preliminary study we can observe that a higher content of raspberries in tea at 11 and 100% were rated better in taste than the tea containing 0.6% raspberries. On the contrary, the addition of hibiscus and chokeberry affect a better assessment of the color and flavor of tea. The study had to make the consumers aware of the fact that the name declared on the packaging "Raspberry Tea" does not necessarily reflect its actual composition. Therefore, while choosing high-quality products, it is necessary to read the label. The presented problem of consumer preferences related to the composition of the product, which can form the quality, is still present and further researches should be conducted.

References

- Adamczak, A., Forycka, A. and Buchwald, W. (2015). The composition of fruit teas available on the polish market of foodstuffs. *Postępy Fitoterapii* 4, 216-222.
- Barylko-Piekielna, N., and Matuszewska, I. (2009). *Sensoryczne badania żywności*. Podstawy, metody, zastosowania. Kraków.
- Boruc, R. (2000). Stygnący rynek. *Handel*, 10, 5.
- Dmowski, P. and Śmiechowska, M. (2008). Wykorzystanie włókna surowego do wykrywania zafałszowań w herbacie. *Żywność. Nauka. Technologia. Jakość*, 3(58), 116 – 122.
- Dmowski, P., Sieńkowska, S., (2015). Konsumencka ocena jakości sensorycznej herbaty czarnej dostępnej na trójmiejskim rynku. *Handel Wewnętrzny*, 355, 101-114.
- Journal of Laws. (2008). No. 24, item 1346. Retrieved from: www.isap.sejm.gov.pl
- Mokrysz, A. (2014). Kawa czy herbata. *Gazeta Finansowa*, 31-35. Retrieved from: <http://archiwum.gf24.pl/wp-content/uploads/2014/08/31-35.pdf>
- Shams, S. (2014). Assessment of consumers' loyalty and switching behavior: a study on selected tea brands in Bangladesh. *Philosophy and Progress*, 1-2, 180-206.
- Szweykowska, A. and Szweykowski, J. (2003). *Słownik botaniczny*. Warszawa.

Процјена квалитета чаја од малине од стране потрошача

Моника Шигиол¹

¹*Вроцлавски универзитет еколошких и бионаука, Вроцлав, Пољска*

Сажетак

Чај од малине се најчешће користи од свих воћних чајева у нашој држави. Циљ овог истраживања представља процјена квалитета три врсте чаја од малине, са различитим саставом и количином малина, од стране потрошача. Оглед је спроведен у децембру 2016. године међу 70 случајно изабраних студената Вроцлавског универзитета еколошких и бионаука. Истраживање је показало да већа количина малине у чају доприноси већој оцјени у погледу укуса чаја. Такође, додаток хибискуса и ароније доприноси већој оцјени у погледу боје и ароме чаја. Ово истраживање је такође имало за циљ да укаже потрошачима на чињеницу да име на декларацији производа „чај од малине“ не указује нужно на тачан састав датог чаја.

Кључне ријечи: чај од малине, процјена потрошача, кривотворење

Monika Sczygiol
E-mail address: monikasczygiol@gmail.com

Received: February 27, 2017
Accepted: June 6, 2017